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GEOGRAPHICAL RECORD

AMERICAN GEOGRAPHICAL SOCIETY

ANNUAL MEETING OF THE SOCIETY. The annual meeting of the Society was held at the Engineering Societies' Building, No. 29 West 39th Street, on Tuesday, January 23, 1912, at 8.30 P. M.

Vice-President Greenough in the Chair.

REPORT OF THE COUNCIL

The Annual Report of the Council was presented and read by its Recording Secretary, Mr. Levi Holbrook:

January 18, 1912.

To the American Geographical Society:

The Council respectfully submits the following report for the year 1911:

The number of Fellows on January 1st was 1,210. The additions have been 63; the losses by death, resignation, etc., 100; and the total Fellowship on December 31st was 1,173, of which number 371 were Life Fellows.

There have been added to the Library 743 books, 2,935 periodicals and pamphlets, 350 maps and charts, and 23 atlases.

There were published in the *Bulletin* besides the Geographical Record, the Book Reviews, Map Notices, and Bibliographical Lists, fifty-two papers, all but four of which were original contributions. The Index to the volume for 1911, over 100 pages in length, is a comprehensive record of the geographical literature and cartographic products added to the library and map room during the year.

Six meetings of the Society were held, at which addresses were made by William Edgar Geil, Mrs. Charles Schaeffer, Arthur Stanley Riggs, John Green Brady, Charles E. Fay and Walter McClintock.

The Cullum Geographical medal has been awarded to Jean B. E. A. Charcot for explorations and surveys in West Antarctica which have added much to geographical knowledge.

The Society's collection of maps and appliances used by teachers of geography in European schools has been exhibited during the year at various points in Missouri, New York, Massachusetts and Michigan. The exhibitions continue to be successful in their educational influence, and the collection will be kept in circulation so long as there is demand for it.

Soon after the opening of the year, Mr. Archer M. Huntington felt it necessary, for personal reasons, to resign the active presidency of the Society, his interest in it remaining, happily, undiminished. The Council in November elected him Honorary President, such action being permitted by the By-Laws in the case of persons who have rendered distinguished and valuable service to the Society.

Early in the summer, the office, library and possessions of the Society were transferred to its new fire-proof building on Broadway at 156th Street. This building, the land on which it stands, and all expenses incident to the change from 81st Street, come to the Society as a free and clear gift from present and former members of the Council, none of the general funds being drawn upon, even for furnishings, etc.

The property No. 15 West 81st Street has been sold at the very satisfactory price of $175,000 and its proceeds invested at interest; the whole income becoming available for the general purposes of the Society.

The Society plans to commemorate the sixtieth anniversary of its foundation and the first of its installation in its new home, by a geographical excursion across the American continent, to be managed and led by Professor William Morris Davis of Harvard University. For information concerning this excursion, its object, plan, scope and progress, reference is respectfuly made to the *Bulletin,* where details will be given from time to time.

For the condition of the finances reference is made to the report of the Treasurer, herewith appended.

All of which is respectfully submitted.

CHANDLER ROBBINS,
Chairman.

LEVI HOLBROOK,
Secretary.

Report of the Treasurer

The report of the Treasurer, Mr. Henry Parish, Jr., for the year 1911, was read by Vice-President Greenough as follows:

General Account

The Treasurer respectfully reports:

On January 1st, 1911, there was on hand a balance of..			$461.74
During the year there have been received for Fellowship Dues, Sales of Publications, Interest on Investments, &c., &c.		$26,971.93	
Mortgages paid off in part		$875.00	
Proceeds of the property:			
No. 15 West 81st Street	$175,000		
less remaining on mortgage	$125,000	$50,000.00	$77,846.93
Total			$78,308.67
There have been expended for Salaries, Meetings, Library, Publications, House Expenses, Insurance, Postage, &c.		$26,749.79	
Invested in guaranteed mortgages		$50,000.00	$76,749.79
Leaving a balance on hand December 30, 1911.			$1,558.88

Report of the Nominating Committee

The Special Committee appointed Nov. 16, 1911, to nominate and recommend to the Society suitable persons to be elected in January, 1912, to fill vacancies then existing in its offices, report that they recommend the election of the following named persons to the offices designated.

Vice-President, ANTON A. RAVEN, term expiring in 1915
Treasurer, HENRY PARISH, JR., " " 1913
Foreign Corresponding
Secretary, WILLIAM LIBBEY, " " 1915
Councillors, FRANCIS M. BACON,
BANYER CLARKSON,
GEORGE W. FOLSOM, } " 1915
CHANDLER ROBBINS,
PAUL M. WARBURG,

[SIGNED.] JOHN GREENOUGH,
ARCHIBALD D. RUSSELL, } *Committee.*
HAMILTON FISH KEAN,

The vote of the Society was unanimously in favor of the persons recommended by the Council and they were declared duly elected.

Vice-President Greenough then introduced the speaker of the evening, Charles Wellington Furlong, who addressed the Society on "Tripoli the Gateway to the Sahara." Various aspects of the city of Tripoli, the oases and the desert were illustrated by many lantern slides.

The Society then adjourned.

AWARD OF THE CULLUM MEDAL TO DR. CHARCOT. The Annual Report of the Council (p. 116) announces the award of the Cullum Geographical Medal to Dr. Charcot for his explorations and surveys in West Antarctica. This recognition by the American Geographical Society of the notable service to science and exploration rendered by Dr. Charcot have been commented upon with hearty approval by many newspapers of America and Europe.

AMERICA

ASSOCIATION OF AMERICAN GEOGRAPHERS. The Eighth Annual Meeting of the Association was held in Washington, Dec. 28-30, 1911. Through the kindness of the National Geographic Society, the sessions were held in Hubbard Memorial Hall. The President, Professor Ralph S. Tarr of Cornell University, presided, and gave the president's address. His subject was, "The Glaciers and Glaciation of Alaska." Professor Martin read a memorial of Professor Christopher Webber Hall, who died on May 10, 1911. In addition to these addresses, thirty-six papers were read by members and by several others, on invitation. Papers on subjects in Meteorology were more numerous than at any previous meeting of the Association.

On Friday evening the Association met with the Geological Society of America to hear the address of its president, Professor W. M. Davis, upon the subject, "The Relations of Geology and Geography." This was followed by a social reunion given to both societies at the Cosmos Club by the Geological Society of Washington.

The first volume of the *Annals* of the Association is now in press and will appear during the winter under the editorship of Professor R. E. Dodge.

Announcement was made of the election of the following officers for the year 1912: President, Rollin D. Salisbury; First Vice-President, Martin R. Campbell; Second Vice-President, Isaiah Bowman; Secretary, Albert Perry Brigham; Treasurer, Nevin M. Fenneman; Councillor for three years, Lawrence Martin. The next annual meeting will be held in New Haven.

THE IDAHO-WASHINGTON BOUNDARY. The boundary line between Idaho and Washington has been resurveyed by the U. S. Geological Survey, as the markings of the survey of 1873 had become largely obliterated and much of the country is now being settled. Bulletin 466 of the Survey by R. B. Marshall, Chief Geographer, is a report of the work. The report contains some of the field notes of Roland J. Reeves the original surveyor, who gave an account of the difficulties and hardships encountered in 1873 in traversing this country, much of which is now well-settled and highly prosperous. The boundary line runs through rolling agricultural and fruit country where the work was easy and also through heavily timbered mountains where continuous chopping was necessary. New posts of wrought iron were set at every mile and at every five miles were planted granite monuments with the words "Idaho" and "Washington" chiseled on their respective sides.

DR. L. A. BAUER RETURNS TO WASHINGTON. Dr. Bauer is at home from a nine months' trip of inspection of the magnetic work which is being conducted on board the *Carnegie* in the Indian and Pacific Oceans and by land expeditions in Australia and Asia. He also visited the magnetic institutions in the Pacific Islands, New Zealand, Australia, India, Burma, Java, China and Japan.

GEOGRAPHICAL SOCIETY IN MINNESOTA. A Minnesota Geographical Society has been organized at the State University, Minneapolis. Prof. Edward M. Lehnerts, of the Department of Geology and Geography, is President and Prof. F. C. Miller of the St. Paul Central High School is Secretary-Treasurer. It was proposed at the first meeting to organize a series of geographical excursions in and around the Twin cities and a committee was appointed to plan the excursions.

THE U. S. TOPOGRAPHIC SURVEY. During the fiscal year ending June 30, 1911, 23,272 square miles of the United States were topographically surveyed by the United States Geological Survey and 6,460 square miles revised, or resurveyed, making a total of 29,732 square miles. About 37 per cent. of the entire United States, exclusive of Alaska, has now been thus surveyed. These surveys are represented by more than 2,000 separate sheets.

CLASSIFICATION OF THE PUBLIC DOMAIN. During the last five years about 206,348,809 acres have been classified by the U. S. Geological Survey, and 75,239,198 acres additional have been withdrawn from public entry.

Of these areas, coal classifications covered 15,621,429 acres; classification of metalliferous land, 288,465 acres; and designation of lands enterable under the 320-acre and Enlarged Homestead Act, 190,438,915 acres. There have been withdrawn during this period 67,724,918 acres of coal-bearing land, 3,394,914 acres of oil land, 2,396,391 acres of phosphate land, and 1,722,975 acres of land believed to be valuable for the development of water power.

AFRICA

RAILROAD AT EL OBEID. The rails connecting El Obeid, the capital of Kordofan, with the Nile South of Khartum reached that city on Dec. 2, 1911. Twenty-eight years ago, the Mahdi entered El Obeid and commanded the well-to-do class, under penalty of death, to leave their brick houses and live in tents or huts of branches so that no exterior sign should bear witness to any inequality among Mohammedans, "who are all sons of God." All the years of the Mahdist supremacy were lean years for El Obeid, whose population dropped from 30,000 to about 5,000, and to-day, it is only 12,000. But when the new road is opened for business, a new era is expected to dawn for El Obeid. The town is coming into touch, by steam rail, river and sea routes, with Khartum, Cairo and Europe. All Kordofan is beginning to feel the impulse of the new era of agricultural and commercial progress ushered in by the Khartum government; and no town in this province is so favorably situated for great growth and development as El Obeid.

The town stands in the part of Kordofan where rainfall is most abundant. Heat is less overpowering here because El Obeid stands on a plateau over 2,000 feet above the sea; and no town west of the Nile is the center of so many caravan routes. El Obeid was the only town in the Egyptian Sudan which, under the Mahdist régime, was still in some sort of touch with the outside world. The few things it still had to sell were sent west through Wadai and across the Sahara to Tripoli; and now the Anglo-Egyptian government has sent its workmen over scores of long routes radiating from the town, cleared them of scrub and other impediments to travel and fitted them to be feeders for the railroad and distributors of the imports which the new highway will bring to the capital.

Kordofan is now yielding to the government revenues that are nearly double the cost of the annual administration of the province; and its prosperity will certainly be much enhanced by the railroad to Senaar and Khartum which will partly replace and partly supplement the camels, pack bulls and donkeys that are now the only means of transportation.

HOMES FOR WHITE MEN IN AFRICA. Another region in tropical Africa has just been declared to be adapted for settlement by European farmers. In the center of Northern Nigeria, a British Protectorate more than four times as large as our state, are the Bauchi highlands, on whose flanks, most of the drainage of the Protectorate has its sources. It is the last part of Northern Nigeria to be explored, because the large native population were wild and hostile. The British did not enter these highlands till about five years ago and then only when they had reason to believe from ore which the natives brought out that it was rich in tin. The British then occupied these highlands and the natives are now supplying vegetable food for the whites and working in the mines. It has been proven that the Bauchi region is one of the greatest sources of tin.

The death rate among the whites there has, thus far, been about twenty per thousand a year, which is the normal rate in most temperate countries. About 600 miles north of the equator, in the latitude of Costa Rica and the central Philippines, at an altitude of 3,000 to 4,000 feet above the sea, this land is declared to be a "splendid wheat-growing country." Mr. Huddart, recently Director of Mines, Mr. Lush, Mr. Tomson and other well-known mining authorities are among those who testify that the Bauchi plateau is a healthful and fertile district where "any kind of vegetable grows well especially the English varieties," where "living is cheap, there being plenty of beef, mutton, fowls, milk, eggs, etc.," and where "the nights are quite cold, and any man who lives well ought to have perfect health." White settlement by farmers is not yet invited. A branch railroad from the Baro-Kano line will soon be extended to this plateau. Up to this time, six large, high districts in tropical Africa have been declared to be fitted, by temperature and fertility, to be the homes of European peasantry. (Based on "Nigeria and Its Tin Fields," by A. F. Calvert.)

DR. HANS MEYER'S EAST AFRICAN EXPEDITION. *The Mitteilungen aus den Deutschen Schutzgebieten* (1911, Nos. 4 and 5) printed a series of letters from Dr. Meyer describing his explorations in the region west of the Victoria Nyanza including Ruanda and the Kirunga Volcanoes. From the German port of Bukoba on the west coast of Victoria Nyanza, his party went westward to Lake Ikimba, whose shape, it was found, had been considerably altered since Capt. Herrmann's survey, the open water stretching farther west, while a swampy tract not shown on the maps extends it still farther. This lake lies at the foot of the eastern plateau, which ends in a steep regular wall over 700 ft. high, running along the eastern and southern shore of the lake, and then strikes southward to Lake Burigi (called Urigi on the present maps), which was afterwards visited. Another escarpment twenty miles to the west forms the edge of the Karagwe Plateau. Between the two lies the depressed land of Ihangiro, a bush-covered wilderness, in which these two lakes are situated. Soundings show that Lake Burigi occupies quite a shallow basin. Passing through eastern Ruanda the party found that this is almost a treeless country, an original plateau dissected by erosion into long regular ridges divided by swampy valleys. A new lake called by the natives Kihonda stretches east and west across a depression twelve miles wide and about 1,000 feet below the surface of the plateau, with many bays and islands.

An interesting country partly unexplored formed by the clay-slate mountain system of northern Ruanda was crossed on the way to the Kirunga volcanoes. This old plateau is furrowed by longitudinal valleys and culminates in a semicircle of mountains, rising in Mt. Kabuji to an altitude of 8,530 feet. This is a grass land with a surprising extent of terrace cultivation, many of the population living miles away from water, the carriage of which involves enormous labor. There are many native paths, but almost no export of produce. This region slopes northward to the great lava tract formed by the outpourings from the volcanoes. Prof. Meyer ascended the highest volcano, Karisimbi and also Niragongo, now in a state of activity. He explored the islands in Lake Kivu, the largest of which he says bears the name of Ijwi, which is not the name now appearing on the maps.

On the way south to Tanganyika, the unexplored region to the southwest of Isawi was studied. The Muvisi range, hitherto supposed to be uninhabited, was found to be well-peopled and cultivated. The route led over the Rusiga to the source of the Ruvuvu, which Baumann, its discoverer, regarded as the true source of the Nile. The whole Tanganyika region was found to be suffering greatly from sleeping sickness, though the utmost efforts are being made to stop its ravages. Dr. Meyer's last letter, written from Daressalem, contains a sketch of the physical, ethnographic and economic relations of the districts traversed. He says it is very important to extend the German Central R.R. to Ujiji and to open communications from that lake port to the north of Tanganyika by steamer. This would afford the best route to the highlands of western Ruanda and Urundi, which is known as a "white man's" country, where settlement by Germans is now advocated.

BUSINESS OF THE SUEZ CANAL IN 1911. In the past year 4,969 ships (25,417,852 gross and 18,324,794 net tonnage) passed through the Suez Canal; also 1667 smaller vessels (32,911 net tonnage). The total receipts of the canal were $26,952,400. (*Le Canal de Suez,* Jan. 22, 1912.)

ASIA

THE SANGPO-BRAHMAPUTRA PROBLEM. It is expected that this year the unexplored stretch of the Sangpo-Brahmaputra, where the river passes from the known Sangpo of Tibet through the Himalayas to the plain of the Brahmaputra in Assam, will be surveyed, and otherwise studied. The military expedition sent by the Indian government to punish the Abor tribe which killed Commissioner Williamson last year and has long prevented the exploration of the unknown part of the river, is accompanied by a number of scientists and topographers. Capt. Trenchard and Lieut. Oakes will have charge of the survey of the unknown part of the river. Botanical, zoological and anthropological investigations will also be made.

POLAR

BRITISH AND AUSTRALIAN EXPEDITIONS. The *Terra Nova* sailed from Christchurch, New Zealand, on Dec. 14, for Capt. Scott's base station in MacMurdo Sound.

Dr. Mawson's Expedition sailed from Hobart, Tasmania, on the *Aurora* on Dec. 2 and after a rough passage of over a fortnight arrived at Macquarie Island all well. This island is about half way between Hobart and the coast of Wilkes Land, on which the Australian Expedition expects to begin to work. It is said that the arrival of the party at Macquarie Island was announced by wireless telegraph, an instalment of which forms a part of Dr. Mawson's equipment. (*Geogr. Journ.,* Feb., 1912, p. 162.)

THE FILCHNER EXPEDITION. A letter has been received in Germany from Dr. Filchner, the leader of the German Antarctic Expedition dated Grytviken, South Georgia, Dec. 9, 1911. He said that on the following morning he and his party would sail, taking a course due south till they reached the northern edge of the pack ice, which they would follow to the east till they should find an opening that they could use to get farther south to the Coats Land region. (*Zeitschr. Gesell. f. Erdk. zu Berlin,* No. 1, 1912).

THE NORWEGIAN EXPEDITION IN SPITZBERGEN. *La Géographie* (Oct., 1911) gives a short account by M. A. Hoel of the work of the Norwegian Expedition which visited that archipelago last summer to continue the topographical and geological surveys carried on in previous years. Though the weather was very unfavorable for surveying, sufficient data were obtained for the making of a complete topographical map of the region between Ice Fiord and Bell Sound. A geological map of the region between the north and south sides of the Spitzberg, Wijde Bay, and Ice Fiord was also made. Photogrammetric methods were largely employed.

ECONOMIC GEOGRAPHY

WORLD'S COAL PRODUCTION. According to statistics collected by the U. S. Geological Survey and published in its *Press Bulletin* the world's coal production in 1910 was about 1,300,000,000 short tons of which the United States contributed about 39 per cent. The following table shows the coal production in short tons of the principal countries in 1910, except in those cases where the figures for 1909 were alone available:

United States (1910)	501,596,378
Great Britain (1910)	296,007,699
Germany (1910)	245,043,120
Austria-Hungary (1909)	54,573,788
France (1910)	42,516,232
Belgium (1910)	26,374,986
Russia and Finland (1910)	24,967,095
Japan (1909)	16,505,418
Canada (1910)	12,796,512
China (1909)	13,227,600
India (1909)	13,294,528
New South Wales (1909)	7,862,264
Spain (1909)	4,546,713
Transvaal (1910)	4,446,477
Natal (1910)	2,572,012
New Zealand (1909)	2,140,597
Mexico (1909)	1,432,990
Holland (1909)	1,235.515
Queensland and Victoria	1,119,708
Italy (1909)	611,857
Sweden (1909)	272,056
Cape Colony (1909)	103,519
Tasmania (1909)	93,845
Other countries	5,236,903
Total	1,278,577,812
Percentage of the United States	39.2

PHYSICAL GEOGRAPHY

THERMAL MAPS. At the Portsmouth meeting of the British Association in August, Prof. A. J. Herbertson read a paper on "Thermal Maps," in which he said that the ordinary maps of the meteorologists were not of much practical use to the geographer, who wanted a map showing the actual temperature at the bottom of the atmosphere and not that over an ideal surface. He discussed the various difficulties in the way of the preparation of such maps, and showed mean actual temperatures for January and July at the bottom of the atmosphere. From these, with certain corrections for the intertropical regions, he had prepared a map, with the assistance of some pupils, showing the natural thermal divisions of the earth's surface. As showing the value of such a map, he pointed out that it removed the popular misconception that the heating of Tibet caused the monsoons of India. The map was of great theoretical and practical value in giving the geographer precise data for a study of the thermal quality of the atmosphere in different parts of the world and in giving to colonists and others an accurate picture of the mean thermal conditions at the opposite seasons of the year in the countries in which they were interested. (*Scott. Geogr. Mag.*, Vol. XXVII, No. 10, 1911, p. 517.)

PRE-GLACIAL SHORELINES IN SCOTLAND. In the western islands of Scotland are pre-glacial shore-lines, described by Wright (Wright, W. B., *Geological Magazine,* New Series, Decade V, Vol. VIII, 1911, pp. 97-109). The pre-glacial sea-cliffs and rock benches are distinguished from the two well-marked post-glacial strands of Scotland by the presence of glacial till, overlying striae, upon the bedrock of their surfaces. They occur at heights of from 95 to 125 feet. These proofs of the elevation of the British Isles before the glacial period have long been recognized in the southern half of Great Britain but not previously in Scotland. They furnish important evidence that, before the ice age, the outlines of the British Isles were not significantly different from the present shape.

LAWRENCE MARTIN.

CONGRESSES

THE TENTH INTERNATIONAL GEOGRAPHICAL CONGRESS. The *Scottish Geographical Magazine* says that a letter received by one of its officers from the Secretary of the Tenth International Geographical Congress, which was postponed last fall till next spring, has now been indefinitely postponed, though it is expected that the Congress will be held in Rome as soon as circumstances will permit.

EIGHTEENTH INTERNATIONAL CONGRESS OF AMERICANISTS. The eighteenth session of this Congress will be held in London, at the invitation of the Royal Anthropological Institute, from May 27th to June 12th, at the Imperial Institute. The leading topics to be discussed at the Congress are:

(*a*) The Native races of America; their origin, distribution, history, physical characteristics, languages, customs and religions.

(*b*) The ancient monuments and the archæology of America.

(*c*) History of the Discovery and European occupation of the New World. The languages admitted are English, German, French, Italian, Spanish and Portuguese. An archæological and ethnological exhibition will be held at the Imperial Institute. Sir Clements R. Markham is President of the Congress.

CONGRÈS INTERNATIONAL D'ANTHROPOLOGIE ET D'ARCHÉOLOGIE PRÉHISTORIQUES. The fourteenth session of this Congress will be held at Geneva, Switzerland, in the first week of September, 1912.

OBITUARY

CLARENCE EDWARD DUTTON. Major Clarence Edward Dutton, U. S. A., retired, died at Englewood, N. J., on Jan. 4, at the age of 70 years. He was long detailed for duty in the U. S. Geological Survey and was eminent for his contribution on volcanoes and earthquakes and for the results of his geographical studies. Among his writings were: High Plateaus of Utah, 1878; Tertiary History of the Grand Cañon District, 1881; Mt. Taylor and the Zuñi Plateau, 1884; the Charleston Earthquake, 1887; and a book, Earthquakes, 1904.

SIR JOSEPH DALTON HOOKER. This eminent English botanist died on Dec. 11, aged 95 years. When he was 21 years old he was assistant surgeon on board the *Erebus* on Sir James Ross's expedition to the Antarctic. When thirty years old he traveled extensively in the Himalayas studying the flora of that region and later he made other botanical expeditions to the east. In 1865 he became director of the Kew Gardens succeeding his father Sir William Hooker, in that position. The results of his discoveries in botany and his many contributions to that study gave him great distinction as a man of science.

R. E. YOUNG. Robert Evans Young, D. L. S., Chief Geographer of the Interior Department, Dominion of Canada, and Superintendent of the Lands Division, Department of the Interior, recently died at Ottawa, aged fifty years. For twenty years he was engaged in the land surveys of Manitoba and British Columbia and in 1904 he made a special survey of the City of Winnipeg. He was appointed Chief Geographer in 1909. Much of his attention has recently been given to the collection of data relating to the economic prospects of regions to the north of Alberta and Saskatchewan. In "Canada's Fertile Northland" and similar works with whose preparation he had much to do, he helped to attract wide attention to the vast heritage of the Dominion to the north of the regions now developing.

Frederic Cope Whitehouse. Mr. Whitehouse died in this city on Nov. 16, 1911. A graduate of Columbia University in 1861, he studied later in France, Germany and Italy. He became known to geographers through his discovery in 1882 of the depression in the Libyan Desert known as the Wadi Raiyan and wrote many papers on the practicability of utilizing it as a reservoir for the storage of Nile waters during the flood periods. His researches in Semitic traditions resulted, he believed, in the identification of the "Land of Goshen" with the present Fayoum which was submerged in the time of Herodotus and was then known as Lake Moeris.

GENERAL

The Airship in Exploration. Professor Dr. H. Hergesell deems it probable that before many years the Zeppelin airship will serve a useful purpose in exploration (*Pet. Mitt.,* Vol. 57, Nov. 1911, p. 241). The improvements in 1911, he writes, have gone some ways to make the Zeppelin ship a practical and safe means of air navigation. The *Schwaben* made over a hundred trips in 1911 without an accident. It has three motors of the new type and on no occasion did the propelling machinery meet with any impairment of its service. The construction of the motors and propellers has been so far perfected that there is now practically no danger that these parts of the ship can be impaired so as to involve it in peril. The Zeppelin ships are being driven at the rate of 45 miles an hour and this increased speed has eliminated the danger from sudden gusts or strong adverse winds. From first to last no storm has yet destroyed a Zeppelin airship in the free air. Another idea that is being worked out is the practical and commodious housing of large airships. One of these structures, now being erected at Hamburg, promises to be suitable for the quick and easy storage of these vessels. The art of air navigation, he says, is still in its primary stage, but he looks for steady progress in the technical evolution of the new art. A problem now claiming attention is how to assure buoyancy in the free air for at least 48 hours while driving at full speed. When this problem is solved and also some other questions relating to the methods, the safety and comfort of air navigation, it will be possible at the present rate of speed, to cross North America in its broadest part in two and a half days and to reach unexplored land areas of the Arctic from Germany in less than a day and a half. He adds that Arctic exploration, by means of airships, will, of course, never be initiated till air navigation is a practical business like that of sea navigation.

Frost Cartridges. "Frost lighting" is one of the most interesting of man's numerous efforts to protect himself and his crops against unfavorable weather conditions. In many sections of the United States ingenious and very effective methods of frost protection have been employed. In California, in particular, frost fighting has been carried to a high degree of scientific development. The careful experiments made there by Professor A. G. McAdie, for the United States Weather Bureau at San Francisco, have been of immense economic benefit to the fruit-growers of the Pacific coast. Professor McAdie has recently devised a new form of heater which has certain advantages over the old-style open fire, and also over the later forms of orchard heaters. It is called a "frost cartridge," and consists of a cylindrical tube, made of heavy cardboard or other slow-burning material, filled with a mixture of crude oil, gravel and sawdust. The ends of the tube are closed with stoppers. The cartridge is suspended by a wire horizontally, about three feet below the fruit. The fire is started by removing the stoppers and applying a torch to small amounts of cotton waste, previously soaked in kerosene, placed at the ends of the cartridge * * * (*Monthly Weather Review,* April, 1911). R. DeC. Ward.

Professor Cleveland Abbe honored. The Council of the Royal Meteorological Society has awarded the Symons Gold Medal to Professor Cleveland Abbe, of the United States Weather Bureau, in recognition of the valuable work which he has done in connection with meteorological science. The Medal was presented at the Annual Meeting of the Society on Jan. 17th.

COMMUNICATION

Toledo, Ohio, Jan. 18th, 1912.

Editor Bulletin of the American Geographical Society:

Sir: In the August, 1911, number of the *Bulletin* (pp. 625-626) appears a very uncomplimentary review of "Argentina and Her People of Today." As the writer of that book I can not let this review pass unnoticed in a periodical of such high standing. After quoting several alleged inaccuracies, the reviewer says the book is "worth little" except for a "hundred pages of history," because "statements are made so recklessly that no data may be trusted." In only one instance cited does the writer admit this error, and that is as to the relative position of Argentina as a producer of wheat. Albert Hale, a conservative writer, and recognized authority on South America, says in "The South Americans" (p. 89): "It is safe to say 500,000,000 acres can some day be turned to cultivation." This is in harmony with an Argentine authority that I followed. The figures quoted by the reviewer would allow less than one-third of the area of Argentina suited to agriculture, which is undoubtedly in error, and "a half billion of acres of fertile arable land," as given in my book, is nearer the truth. Dr. Hale also says (p. 91): "Only a few feet below the surface (middle Argentina) water can be found for live wells or windmills." In a publication issued by the Department of Commerce and Labor at Washington, in 1906, by Lincoln Hutchinson, and entitled "Report on Trade Conditions in Argentina, Paraguay and Uruguay," the temperature appears practically as in my book, and the Ohio Valley is given as one comparison. The historical incident of the "Reconquista" is explained in full on pages 307-9, in a way historically correct. The "rain of fish" is not given as a scientific fact, but is qualified by "it is claimed." In "Modern Argentina," by W. H. Koebel, and "Eight Months on the Gran Chaco," by Juan Pelleschi, this phenonenon is given in all seriousness. Regarding the "column of sheep" all I have to say is that the statement was certainly conservative, and not "reckless." It answered the intended purpose of a concrete illustration. The reference to Patagonia is simply an interpretation of language, and the paragraph in the book speaks for itself. These are the only "reckless statements" cited by the reviewer. I leave the judgment with any impartial reader. Nevin O. Winter.